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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,885	02/25/2004	Grant C. Zenkner	BO1 - 0173US	1895

60483 7590 12/01/2006

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EXAMINER	
STAICOVICI, STEFAN	

ART UNIT	PAPER NUMBER
1732	

DATE MAILED: 12/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/786,885	ZENKNER ET AL.	
	Examiner	Art Unit	
	Stefan Staicovici	1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/05/2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) *20-26* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 August 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/28/04;9/18/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1-19 in the reply filed on October 5, 2006 is acknowledged.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3 and 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Waldrop, III *et al.* (US 2002/0022422 A1).

Waldrop, III *et al.* (US 2002/0022422 A1) teaches the claimed process of making a fiber composite including, providing a non-planar mandrel, applying fiber pre-preg sheet onto said mandrel, applying a first, flexible bag (caul) onto said fiber pre-preg sheet such a first region is in contact with the fiber pre-preg sheet and a second region extends away from the fiber pre-preg sheet (see Figure 10), applying a second, flexible bag over the first, flexible bag, drawing a vacuum, injecting a resin to impregnate the fiber pre-preg sheet and curing the resin under heat and pressure to form the fiber composite (see page 17, ¶¶ 213-215). It is noted that when a vacuum is drawn the second, flexible bag collapses against the first, flexible bag such that both

the first and second, flexible bags are flush against the fiber pre-preg sheet. Furthermore, it is noted that Waldrop, III *et al.* (US 2002/0022422 A1) specifically teaches that the double vacuum bag provides a "caul effect," hence teaching that the first, flexible vacuum bag is in effect a caul (see page 2, ¶ 11, lines 1-5).

Regarding claims 3 and 14, Waldrop, III *et al.* (US 2002/0022422 A1) teaches that the first, flexible vacuum bag (caul) is sealed to the mold. It is submitted that during the sealing process the first, flexible vacuum bag (caul) is stretched.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mead (US Patent No. 6,620,369 B1) in view of Waldrop, III *et al.* (US 2002/0022422 A1).

Mead ('369) teaches the basic claimed process for making a fiber composite including, providing a non-planar mandrel (40), applying fiber pre-preg sheet (20) onto said mandrel, applying a peel-ply (release sheet) (140) over the fiber pre-preg sheet (20), applying a caul (160) over the peel-ply sheet (140), applying a flexible vacuum bag (180) over the caul (160), drawing

a vacuum, and curing the resin under heat and pressure to form the fiber composite (see col. 7, line 1 through col. 8, line 63).

Regarding claims 1-2 and 12-13, although Mead ('369) teaches a caul sheet, Mead ('369) does not teach that the caul sheet has a first section in contact with the fiber pre-preg sheet and a second portion that is stretched away from the fiber pre-preg sheet. Waldrop, III *et al.* (US 2002/0022422 A1) teaches a process for making a fiber composite including, providing a non-planar mandrel, applying fiber pre-preg sheet onto said mandrel, applying a first, flexible bag (caul) onto said fiber pre-preg sheet such a first region is in contact with the fiber pre-preg sheet and a second region extends away from the fiber pre-preg sheet (see Figure 10), applying a second, flexible bag over the first, flexible bag, drawing a vacuum, injecting a resin to impregnate the fiber pre-preg sheet and curing the resin under heat and pressure to form the fiber composite (see page 17, ¶¶ 213-215). It is noted that when a vacuum is drawn the second, flexible bag collapses against the first, flexible bag such that both the first and second, flexible bags are flush against the fiber pre-preg sheet. Furthermore, it is noted that Waldrop, III *et al.* (US 2002/0022422 A1) specifically teaches that the double vacuum bag provides a "caul effect," hence teaching that the first, flexible vacuum bag is in effect a caul (see page 2, ¶ 11, lines 1-5). Therefore, it would have been obvious for one of ordainry skill in the art to provide the flexible, vacuum bag sheet (caul) of Waldrop, III *et al.* (US 2002/0022422 A1) in the process of Mead ('369) because Waldrop, III *et al.* (US 2002/0022422 A1) teaches that such an arrangement provides for improved resin flow, thereby providing for an improved product and also because,

Mead ('369) teaches a caul sheet, hence suggesting the flexible, vacuum sheet of Waldrop, III *et al.* (US 2002/0022422 A1) that acts a caul sheet.

Regarding claims 3 and 14, Waldrop, III *et al.* (US 2002/0022422 A1) teaches that the first, flexible vacuum bag (caul) is sealed to the mold. It is submitted that during the sealing process the first, flexible vacuum bag (caul) is stretched. Therefore, it would have been obvious for one of ordainry skill in the art to stretch the flexible, vacuum bag sheet (caul) of Waldrop, III *et al.* (US 2002/0022422 A1) in the process of Mead ('369) because Waldrop, III *et al.* (US 2002/0022422 A1) teaches that such an arrangement provides for improved resin flow, thereby providing for an improved product and also because, Mead ('369) teaches a caul sheet, hence suggesting the flexible, vacuum sheet of Waldrop, III *et al.* (US 2002/0022422 A1) that acts a caul sheet.

In regard to claims 4-7, 9, 11 and 15-19, Mead ('369) teaches a step mandrel (40) having an upper portion, a step portion and a lower portion (see Figure 5). Further, Mead ('369) teaches a flexible, vacuum bag that is in contact with the upper portion, extends away from the step portion and is sealed to the third portion (see Figure 5). Waldrop, III *et al.* (US 2002/0022422 A1) teaches a first, flexible bag (caul) that is in contact with a first portion of a mandrel and is sealed to a second, lower portion of the mandrel (see Figures 8 and 10). Therefore, it is submitted that in the process of Mead ('369) in view of Waldrop, III *et al.* (US 2002/0022422 A1) the first, flexible vacuum bag (caul) has a first portion in contact with the upper portion of mandrel, a second portion extending between the step portion and the lower portion of mandrel and is sealed to the third, lower portion (see Figure 5 of Mead ('369)). Upon application of vacuum, the

second, flexible vacuum bag in the process of Mead ('369) in view of Waldrop, III *et al.* (US 2002/0022422 A1) collapses against the first, flexible vacuum bag (caul) and comes in contact with the pre-preg sheet and the mandrel.

Specifically regarding claim 8, Waldrop, III *et al.* (US 2002/0022422 A1) teaching sealing the first, flexible vacuum bag (caul) against the mandrel using a sealant (56) (see Figures 8 and 10). Although the process of Mead ('369) in view of Waldrop, III *et al.* (US 2002/0022422 A1) do not specifically teach a clamping member, the use of a clamping member to seal a vacuum bag is well known. It would have been obvious for one of ordinary skill in the art to provide a clamping member to seal the first, flexible vacuum bag (caul) as an equivalent alternative to the sealant in the process of Mead ('369) in view of Waldrop, III *et al.* (US 2002/0022422 A1) because of known advantages such as simplicity and cleanliness and also because sealants and clamping members are known to be equivalent alternatives.

Regarding claim 10, Mead ('369) teaches applying a peel-ply (release sheet) (140) over the fiber pre-preg sheet (20) (see Figure 5).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stefan Staicovici, Ph.D. whose telephone number is (571) 272-1208. The examiner can normally be reached on Monday-Friday 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson, can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stefan Staicovici, PhD

Primary Examiner

11/28/06

AU 1732

November 25, 2006